



The end portions of the shoulder belt portion and the upper shoulder belt are provided with belt retractors, attached to the seat backrest. In an attempt to step out the passenger has to lower the upper part of his body in order to slip underneath the upper shoulder belt which cannot be removed.

- 5 In order to enhance the convenience the belt deflector of the upper shoulder belt is replaced with a latch plate and a corresponding buckle assembly, fastened to the vehicle frame.

DE 196-29 878 A1 teaches a four-point seat belt, comprising two independent three-point seat belts, each having a belt retractor, latch plate, belt deflector and buckle assembly.

- 10 US 3,977,696 discloses a four-point seat belt, comprising a three-point seat belt and an upper shoulder belt, both of which, provided with belt retractors, are guided in two rails and driven by electrical motors of a heavy device. When the vehicle roof is totally deformed in a rollover-accident the heavy device crushes the passenger into death.

- 15 US 5,123,673 discloses a four-point seat belt, comprising a three-point seat belt and an upper shoulder belt, both of which are provided with belt retractors. An intricate, automatic release device facilitates the release of both buckle assemblies, each equipped with an actuator to release them, regardless of which one is manually released first. When an MB 200 crashes into the vehicle door of an MB S in the city of Geisenheim, a lateral intrusion of about 80 cm is measured. The accident report "U170199" is incorporated herein. When used, the buckle assembly, actuator and other parts, all of which face the totally deformed vehicle door, are destroyed. Hence, the other one does not function. The severely injured driver remains restrained. This rescue workers can't evacuate him within seconds.

In the NHSTA side crash test, which, currently legislated, idealizes an SUV crashing at an angle of 30° into a door or vehicle side. As a result, the buckle assembly, actuator and other parts are destroyed.

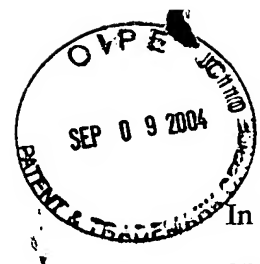
- 25 A complicated latch-plate-feeding device, installed to the side of seat cushion, moves forwards to present the latch plate of the three-point seat belt to the passenger, after having sat down. This device, facing the vehicle door totally deformed in a side crash, is destroyed.

- 30 US 5,411,319 discloses a four-point seat belt, comprising two independent three-point seat belts, having a common lap belt portion. Two end belt portions of both three-point seat belts are projected through the seat backrest and attached to a pair of belt retractors, provided with a pair of supporting pieces, which are arranged in a pair of seat rails, are retained thereby and are moveable therealong with the seat when the latter is longitudinally adjusted.

- 35 US 5,599,070 teaches a three-point seatbelt and a turning mechanism, fixed to the seat backrest on the top edge and comprising eight non-standard parts, one of which is a bezel, rotatable in the longitudinal axle of the turning mechanism and having an exit slit, through which the shoulder belt portion 1,2 is extended over the shoulder of a belted passenger.

- 40 US 6,145,881 discloses a seat-belt tensioner, mounted on the top edge of a seat backrest. In an accident its pyrotechnic piston and cylinder assembly pulls the shoulder belt portion upwardly away therefrom in order to remove slack from the lap- and shoulder belt portions, but both shoulders become unrestrained. As a result, the passenger frees himself from the restraint in a rollover-accident.

- 45 When having measured the sound of an inflated airbag of VW Golf IV at an average level of 165 dB Dr. Hohmann from a Swiss Insurer found out the high sound level is responsible for hearing damage. His investigation report is incorporated herein. Beyond doubt, the explosion of the pyrotechnic unit, located very close to the ear, results in hearing damage or deafening.



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25 Moreover, the frame of the seat backrest must be reinforced and the bulky seat-belt tensioner needs space and impairs the overall seat design. Till now cars are equipped with seat-belt tensioners, installed beneath the seats or in the B-post sections in order to insulate the sound and avoid hearing damage.

According to the above-mentioned patent docs US 3,977,696, US 5,123,673, US  
30 5,411,319, US 6,076,894, US 6,375,270 B1, DE-OS 28 13 888 and DE 196 29 878 A1 the